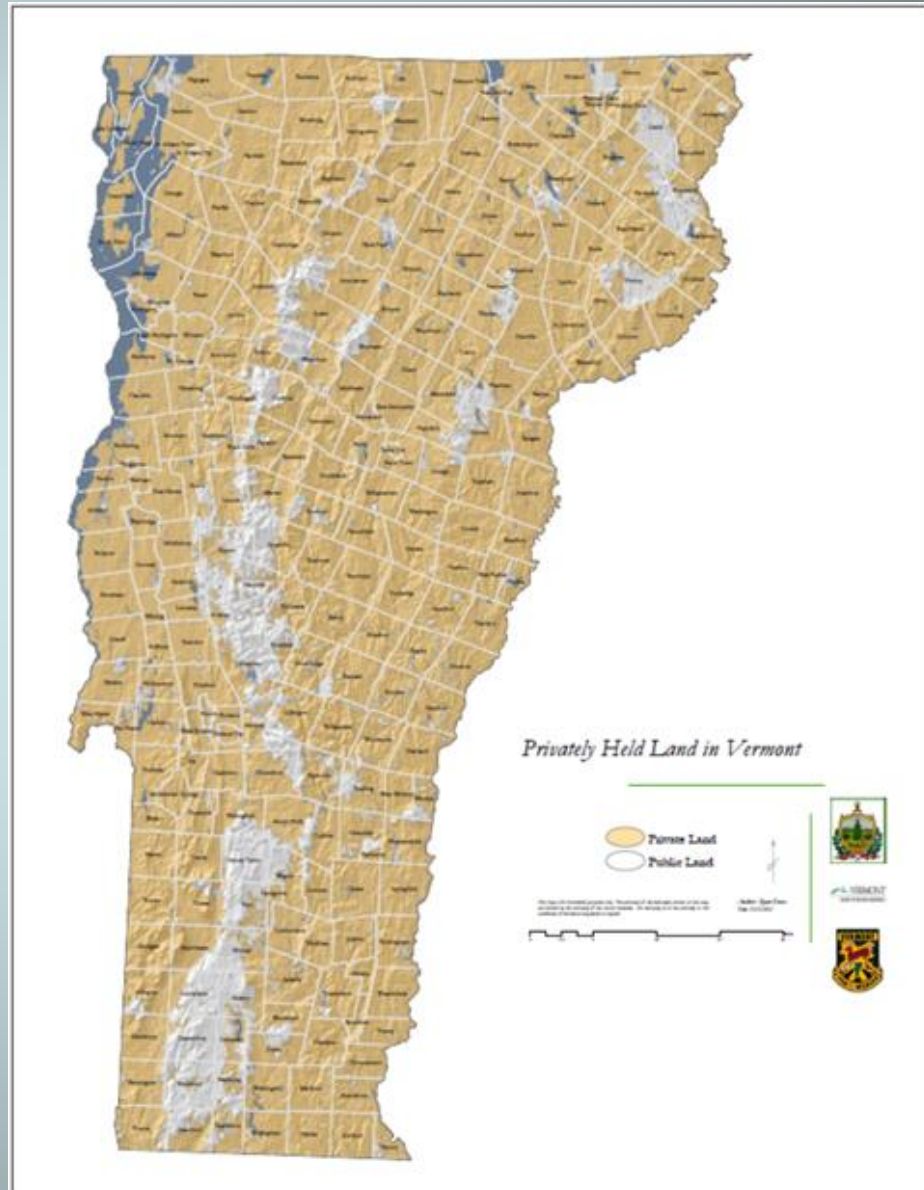


Exploring the ways your community can enhance Vermont's wildlife

Andrea Shortsleeve & Dave Adams
Vermont Fish and Wildlife Department
September 15, 2017

Why Private Lands?

- 85% of Vermont is owned by private landowners
- The majority of Vermont's forests are also privately owned.



Why Private Lands?

- Landowner surveys show that people are interested in wildlife on their property.
- The future of Vermont's wildlife is in the hands of private landowners.



Land Stewardship

- The conservation of a property's natural resources and features for a long period of time.
 - Continue to benefit today
 - Ensure future generations will also benefit



Economics of Conservation

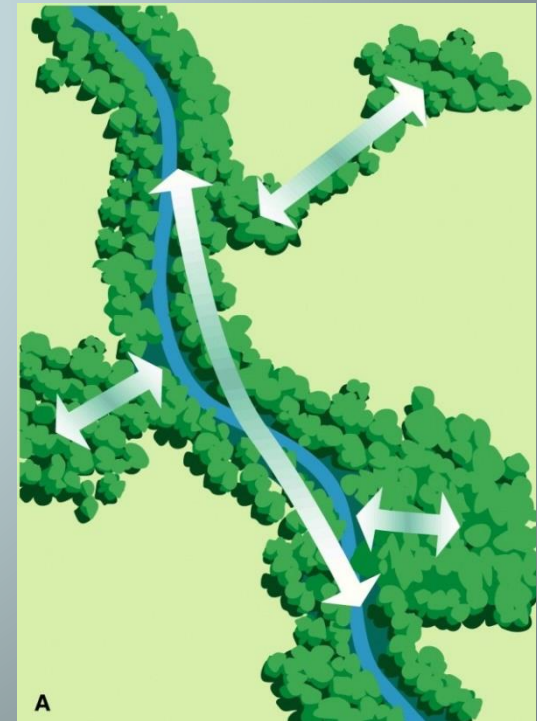
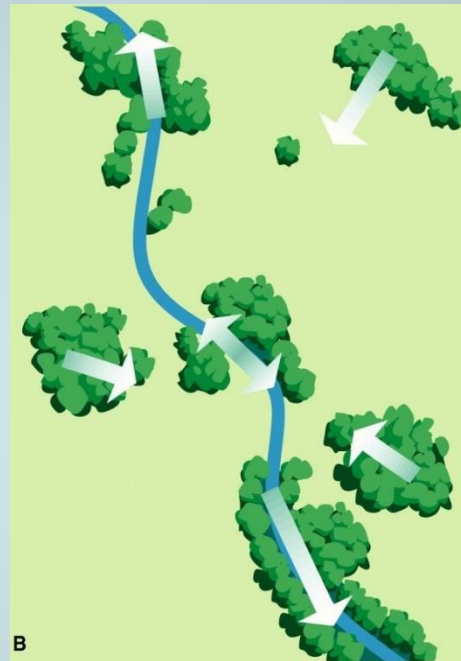
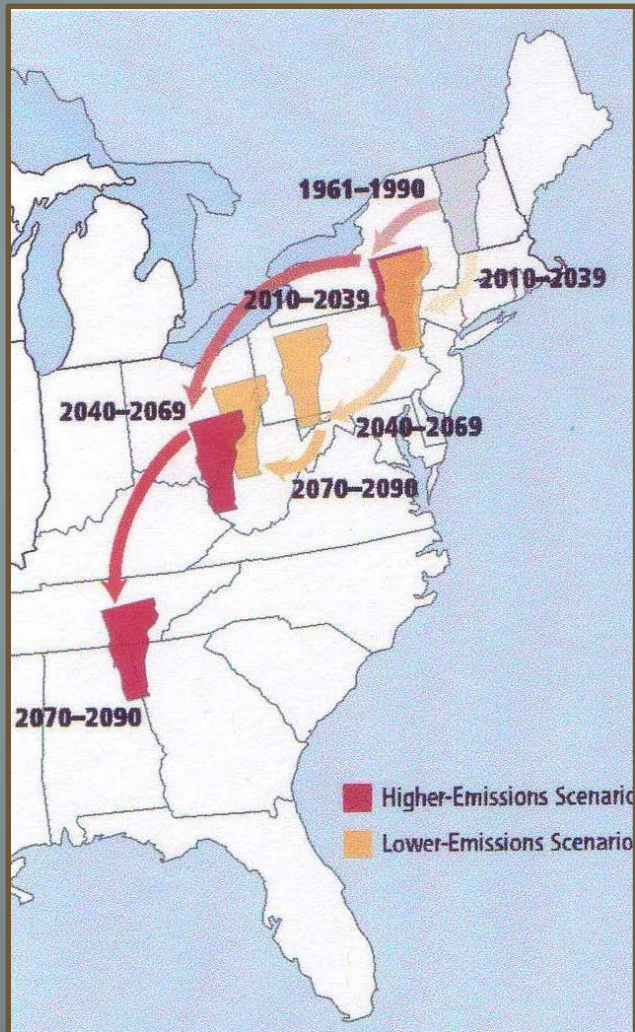
- 2015 Economics of Conservation in Vermont Report
 - Vermont's rural character is distinctive
 - Forest economy comprises 12% of GDP
- Forest based recreation and tourism – \$1.9 billion
- Forest products - \$1.5 billion
- Hunting, fishing, wildlife viewing - \$685 million



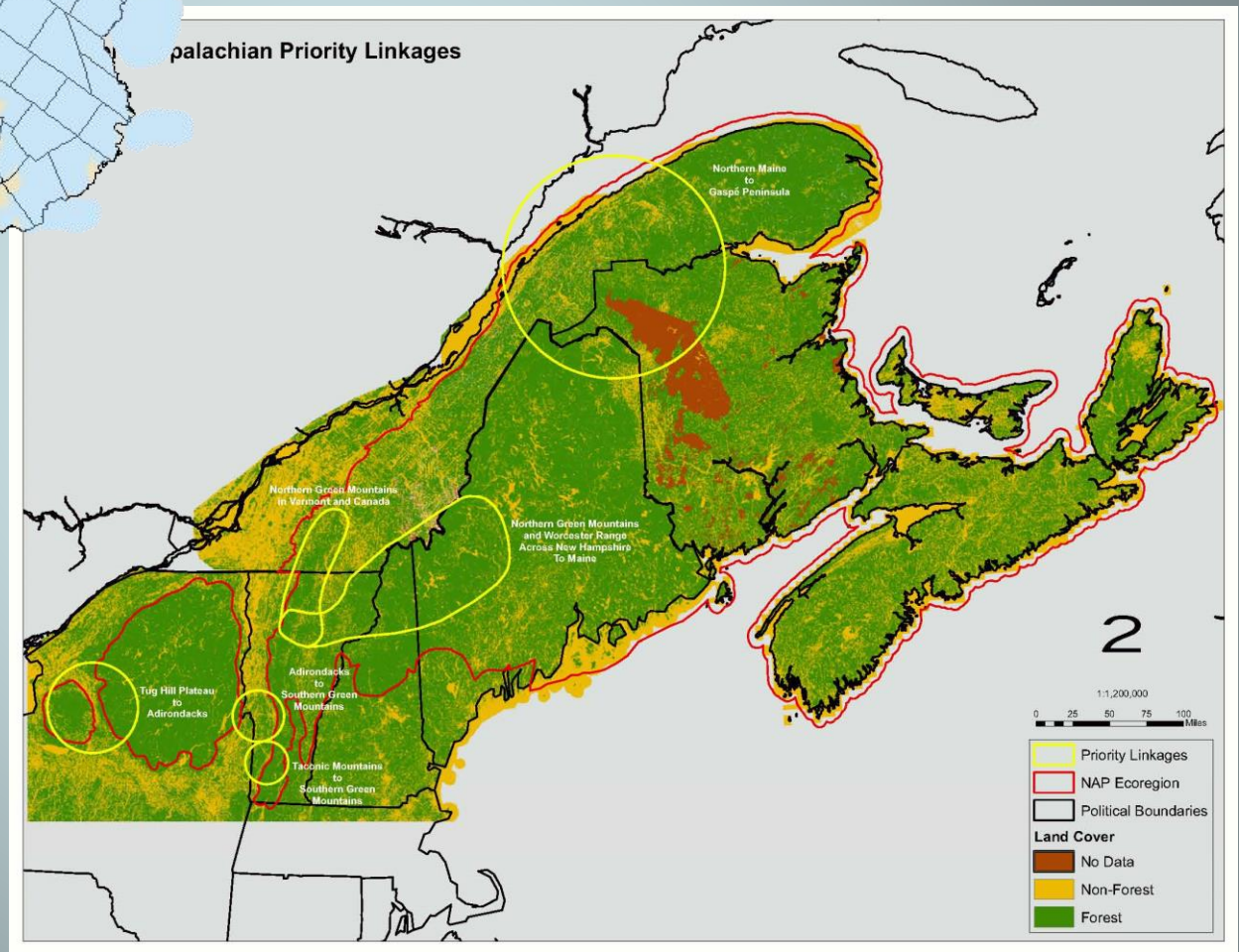
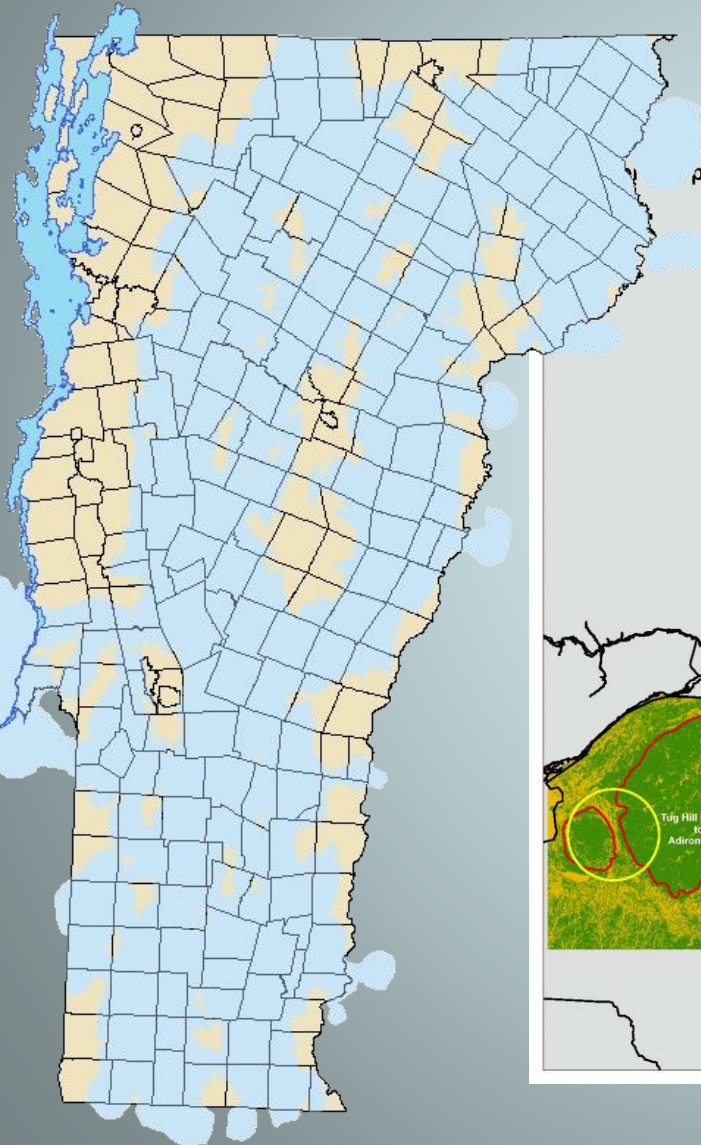
Economics of Conservation

- Undeveloped, conserved, and working lands provide:
 - Quality of life
 - Health Services
 - Pollution Mitigation
 - Critical Infrastructure
- Fragmentation and habitat loss will be costly to Vermont

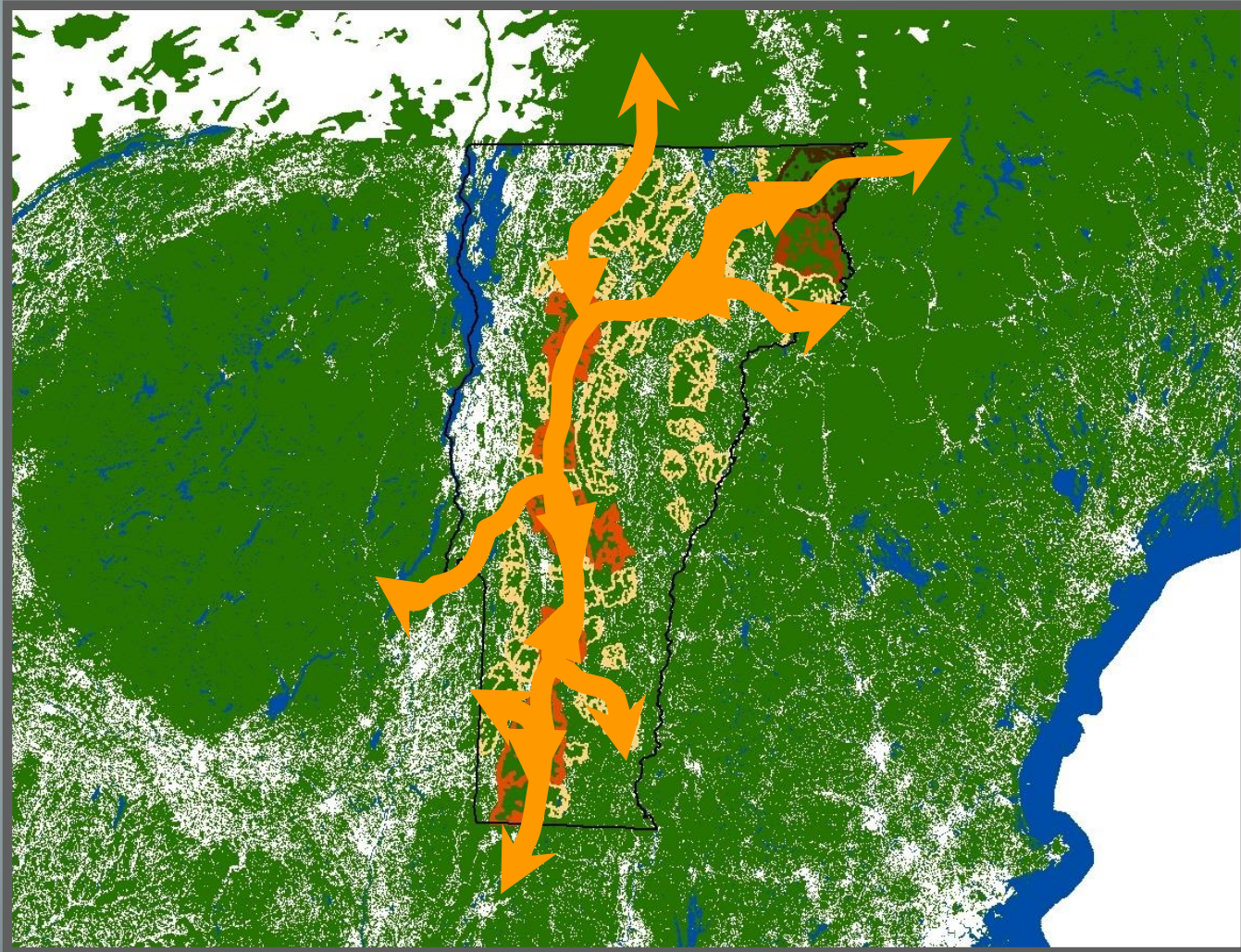
Climate Change Resilience



Regional Connectivity



Regional Connectivity



Habitat Threats: Fragmentation



Intact



Fragmented

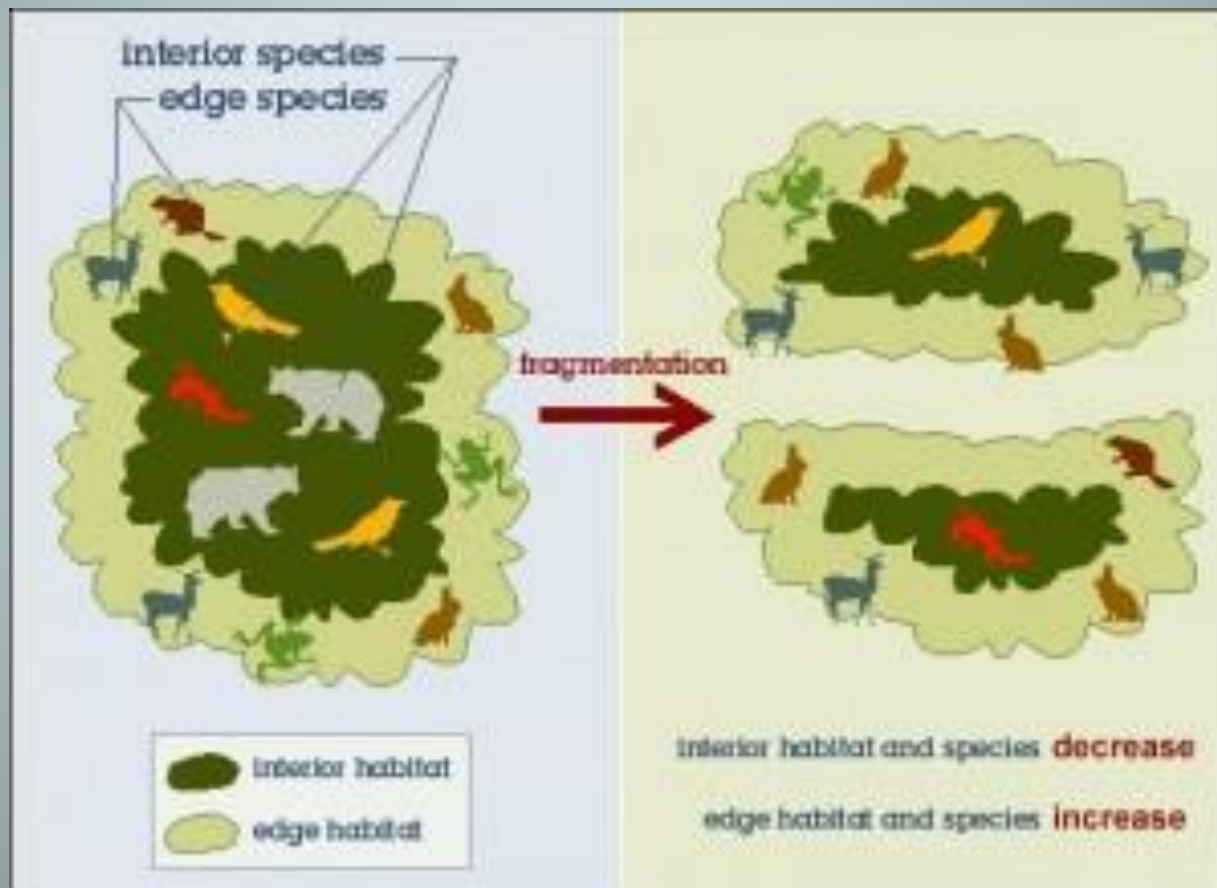


Parcelized



Parcelized and
Fragmented

Habitat Threats: Edge



Habitat Threats: Invasive Plants

- Suppress native plants
- Host non-native insects
- Seeds are low in nutrients
- Prolific seeders
- Seed remains viable in soil for years



Habitat Threats: Lack of Structural Diversity



Habitat Threats: Lack of Structural Diversity



St. Albans, Franklin CO.



Wells, Rutland CO.

Good Structural Diversity



Scarlet Tanager



Veery



Ovenbird

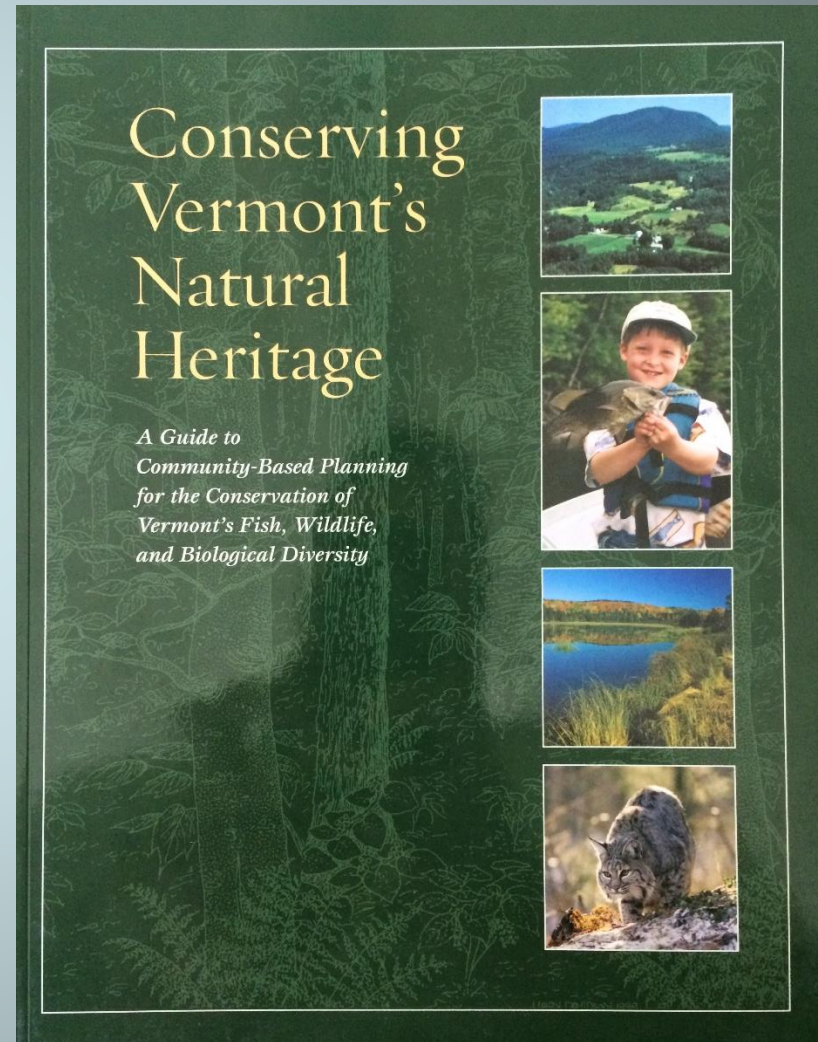
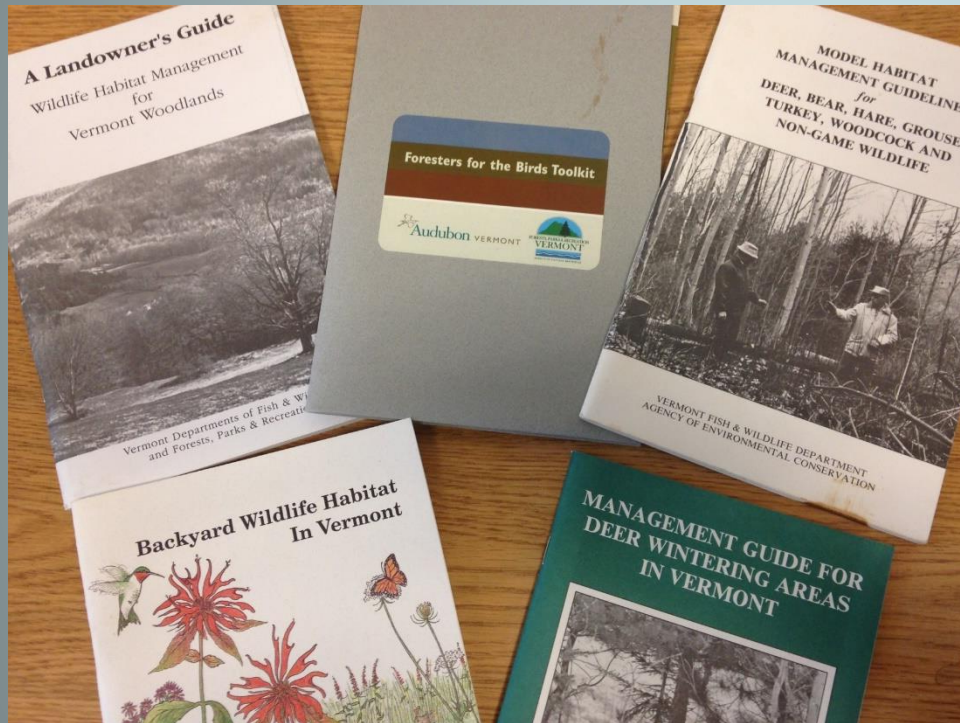


Habitat Programs and Resources

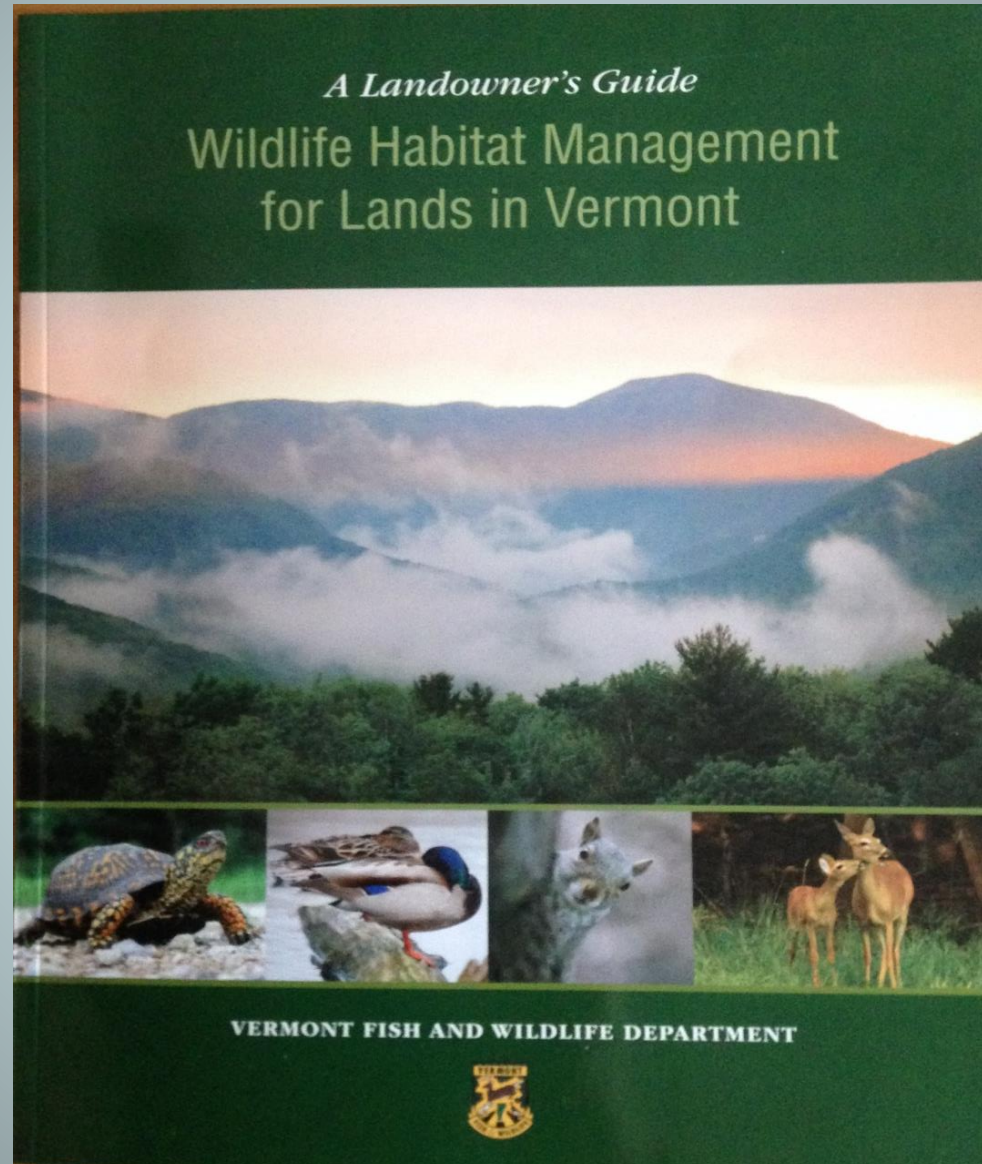
- VT Fish and Wildlife:
 - Technical Assistance
 - Landowner Guide
 - ANR Atlas and BioFinder
- VT Forest, Parks, and Recreation:
 - Use Value Appraisal (Current Use)
- USDA NRCS - Farm Bill Programs
- NGO Partners:
 - Vermont Coverts
 - Audubon's Forest Bird Initiative
 - Vermont Woodlands Association



History of Technical Assistance



New Habitat Management Guide



How are we using the guidelines?

- Starting point for landowners
- Applications in UVA
- Application for guidance with Farm Bill programs
- Trainings for consulting foresters, loggers, and landowners

Guidelines

focus on:

- Forest Habitat Conditions
- Natural Community Concepts
- Habitat for Game Species
- Forest Songbird and Deer Winter Habitat



Guidelines focus on:

- Mast Production Areas
- Shrub-land and Young Forest
- Wetland and Riparian Habitats
- Grasslands and Meadows
- Invasive Species



Considering Wildlife Habitat on Private Land



Active Management

- Create and maintain young forest habitat – patch cuts, shrubland, old field
- Crop and mast tree release
- Invasive species treatment
- Timber stand improvement



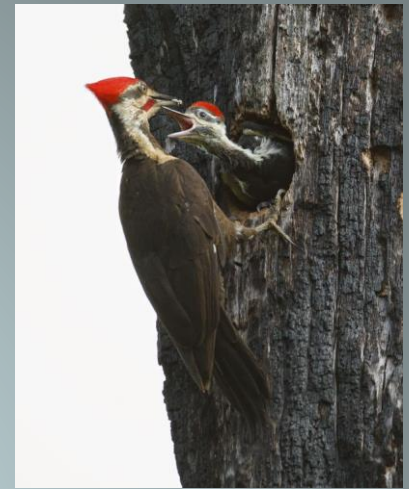
Snags and Den Trees

- Provide important habitat for birds and mammals
- Extremely important bat habitat



Snags and Den Trees

- Wildlife that use snags and den trees
 - Woodpeckers
 - Nuthatches
 - Black capped chickadees
 - Northern Long-eared bat
 - Indiana Bat
 - Snakes
 - Black bear



http://stevecreek.com/wp-content/uploads/2012/05/Pileated-Woodpeckers_120502_5117.jpg



GSMNP, <http://owlsintheorchard.tumblr.com/>

Downed Woody Material

- Coarse Woody Material
 - Larger pieces are better than small
 - Larger pieces last longer
 - Improve forest health
 - Important for:
 - Salamanders
 - Small mammals
 - Frogs
 - Snakes
 - Turkeys
 - Ruffed grouse



Downed Woody Material

- Coarse woody material and brush piles
 - Returns nutrients to soil
 - Provides cover for small mammals
 - Provides roost sites for some birds
 - Protects regeneration from browsing



Downed Woody Material



Not Enough Down Material!

Downed Woody Material



Plenty of woody material



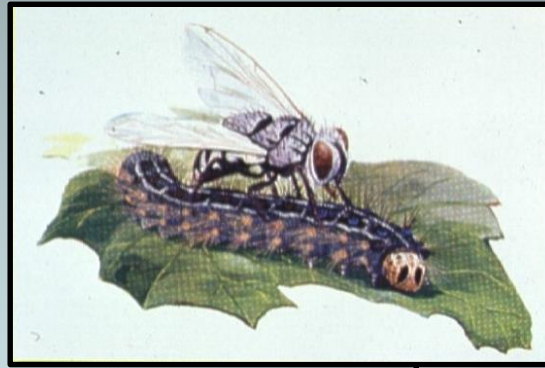
Considering Pollinators

- Needed to reproduce over 85% of flowering plants in the world
- 2/3 of the world's crop species
- Economic value ~ \$3 billion in US
- Fruits & seeds derived from insect pollination are a major part of the diet of 25% of all birds and of mammals ranging from voles to grizzlies.



Pollinator Threats

- Habitat Loss – Agriculture, Development
- Pesticides – absorbed through exoskeleton, tainted nectar, pesticide covered pollen
- Diseases – nonnative fungi, pathogens



Pollinator Habitat Needs





USDA NRCS Farm Bill Wildlife & Forestry Practices

US Department of Agriculture

Natural Resources Conservation Service

In Partnership with VT Department of Fish and Wildlife and VT Department of Forests and
Parks

Farm Bill

- Primary mechanism for private lands technical and financial assistance through Environmental Quality Incentives Program (EQIP)
- Generally, continuous Sign-Up at any of NRCS 10 Field Offices
- Contact a VFWD Habitat Biologists for site visit

VDFW Habitat Biologists

- Call Us!
- Technical Assistance for landowners
 - Property walks
 - Management plan reviews
 - Workshops and Tours



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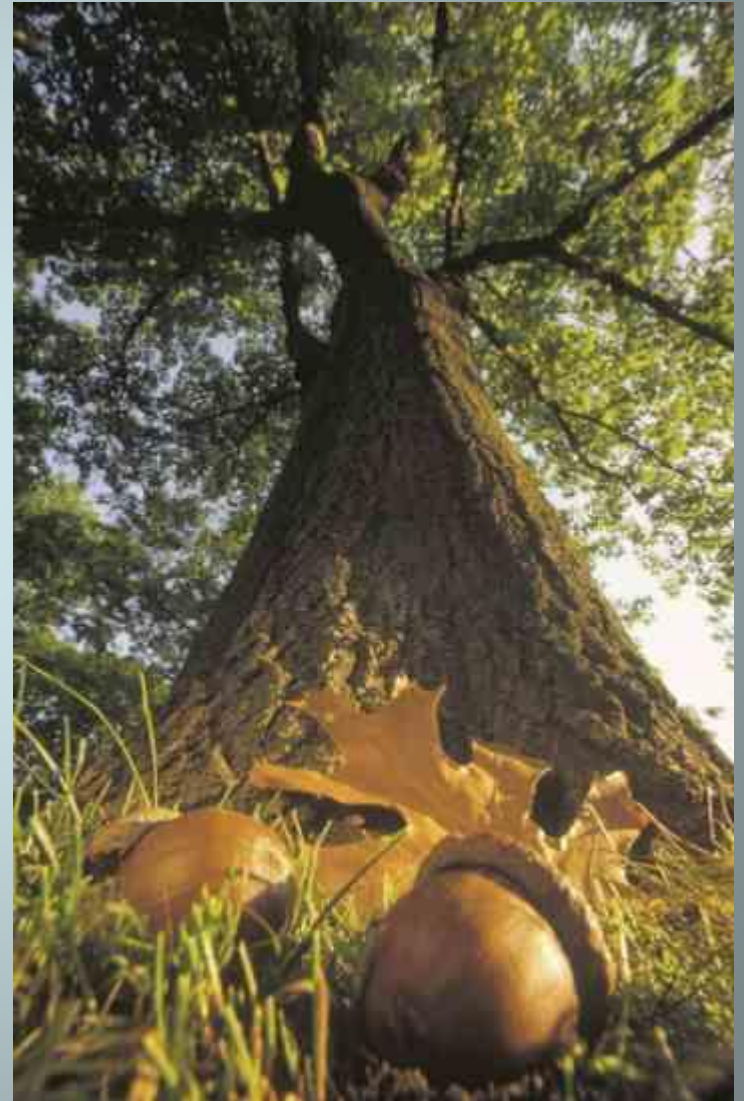
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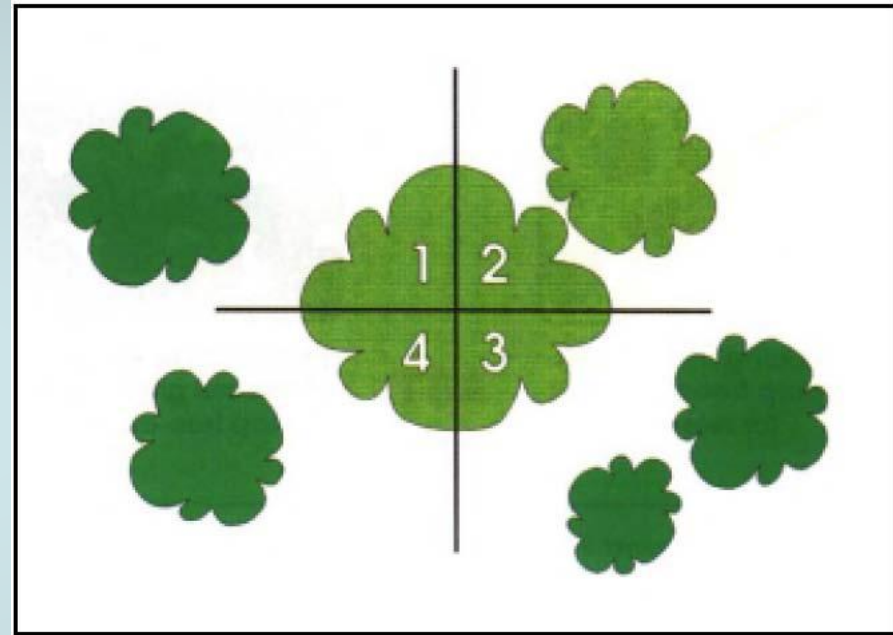
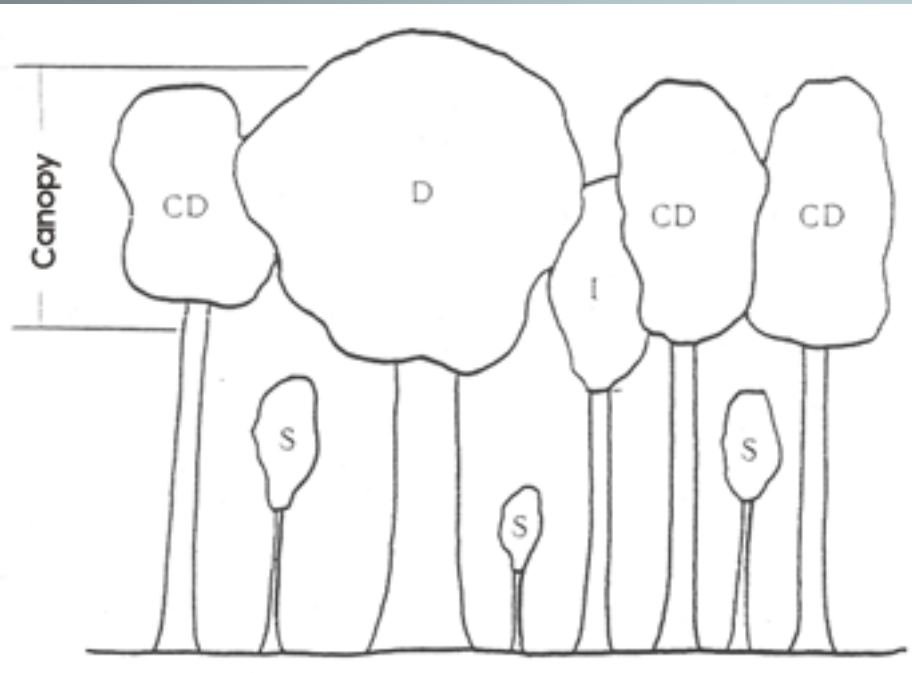
Andrea Shortsleeve
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Mast Tree Release

- An important source of food
 - Hard mast vs. Soft mast
- Without release, trees do not produce as much mast
- Release on 3-4 sides
- Greater chance to alter the composition of stand



Mast Tree Release



Mast Tree Release

- Common mast trees to release
 - Red oak
 - White oak
 - Black cherry
 - Service berry
 - Yellow birch
 - American beech
 - Shagbark hickory





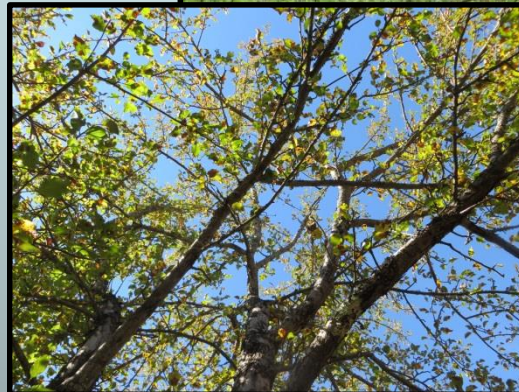
Mast Tree Release

- Wildlife that rely on this food source:
 - White tailed deer
 - Black bear
 - Turkeys
 - Ruffed grouse
 - Squirrels and Chipmunks



Apple Tree Release/Pruning

- “Releases” the apple tree from competition
- Provides direct sunlight
- An effective way to improve productivity



Invasive Plants Treatments

- Mechanical, manual, and chemical options available
- Focus on the removal of the source
- Containment, not eradication
- Used in conjunction with other wildlife and forestry practices





Common Invasive Plants in VT

- Honeysuckle
- Buckthorn
- Autumn Olive
- Barberry
- Multiflora Rose
- Oriental Bittersweet
- Japanese Knot Weed
- Burning Bush
- Wild Parsnip
- Wild Chervil
- Amur Maple
- Norway Maple
- Purple Loosestrife
- Phragmites/
Common Reed

Creating Young Forest Habitat

- Leave standing dead
- Leave large whole trees remaining in cut
- Leave seed trees



Creating Young Forest Habitat

- Wildlife that use Young Forest Habitat:
 - White Tailed Deer
 - Chestnut Sided Warbler
 - Black bear
 - American woodcock
 - Bobcat
 - Pollinators



Improving Forest Bird Habitat

- Vertical structure
 - Canopy Layers
 - Ground
 - Under-story
 - Mid-story
 - Overstory
 - Many birds are habitat specialists and will only use certain layers



Forest Bird Habitat



Poor Forest Bird Habitat!

Forest Bird Habitat



Good Forest Bird Habitat

Take Home Message

- Habitat management is in the hands of private landowners
- Programs available to help with management
- Town Forests and Parks should be examples of good habitat management for landowners to model after

Take Home Messages

- Vermont Fish and Wildlife is here to help:
 - Property Walks
 - Habitat Plans
 - Forest Management Plan Review for wildlife habitat
 - Enrolling in conservation and funding programs
 - Workshops and Presentations in the Community



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